DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF:

CEPOH

1 October 2001
(Corrected 3 Oct 01)

Memorandum for Record:

Subject: Responses to the Commonwealth of the Northern Mariana Islands (CNMI) Division of Environmental Quality (DEQ) comments on the Focused Feasibility Study and Proposed Treatment Plan for Remediation of the PCB contaminated soils at the Tanapag Village, Saipan, CNMI.

I. Focused Feasibility Study

The Focused Feasibility Study ("FFS") evaluated ten remedial action alternatives to address the polychlorinated biphenyl ("PCB")-contaminated soil stockpiled in Tanapag Village, Saipan. The U.S. Army Corps of Engineers, Honolulu District ("ACE") excavated and stockpiled the approximately 20,000 tons of PCB-contaminated soil during its Phase III removal action. In general, the Division of Environmental Quality ("DEQ") comments that the effectiveness of the FFS is compromised by the lack of an adequate characterization of the waste soil targeted for treatment. DEQ also requests that ACE reconsider, and provide more detail regarding the decision to eliminate alternative 4D, On-Site Treatment by ITD and PCB Destruction by Base-Catalyzed Dechlorination.

A. General Comments

1. Waste Soil Characterization

DEQ maintains that an analysis of the alternatives for remediation of the contaminated soil piles stored in Tanapag requires a thorough characterization of the waste soil. It is known that a military fuel farm was located in Tanapag Village and that fuel storage tanks remain scattered throughout Tanapag. While ACE maintains that this remediation focuses on PCBs, choosing an effective remediation method requires knowledge of all hazardous constituents in the waste soil piles.

The FFS lacks any discussion of the characterization of the soil, and therefore, does not address whether the proposed alternatives will address hazardous constituents other than PCB that may be present. This is of particularly high concern if ACE plans to return treated soil to residential sites in the village where exposure to individuals may occur.

DEQ understands that a waste characterization was performed on the stockpiled soils and has reviewed the preliminary results. The results indicate that TCLP analyses were performed for all contaminants except PCB, dioxins, and dibenzofurans. This type of analysis is generally used to determine whether a material is a hazardous waste as that term is defined in USEPA regulations. It tests whether a particular hazardous constituent will leach out of the material at levels of concern.

For the purposes of the FFS, TCLP analysis is not the most appropriate method for the characterization of the waste soil piles with regard to many of the alternatives proposed. The objective in testing the soil piles is to determine: (1) whether other chemicals of concern are present in the soil at a level that could interfere with the evaluated treatment methods; and (2) whether the treatment method ultimately chosen will reduce any hazardous constituents other than PCB to a level that is safe for residential exposure. The TLCP test does not address these concerns – only a direct test of the soil for the presence of other hazardous constituents will allow ACE to consider whether the remediation methods proposed will deal with any other constituents, and ultimately, whether the treated soil is appropriate for residential areas.

In order to consider this factor fully, based on the history of the site, ACE should, at a minimum, analyze the waste soil piles for copper, mercury, total organic carbon, polycyclic aromatic hydrocarbons, chlorobenzenes, lead, arsenic, and cadmium using methods that measure the actual level of these constituents in the soil. DEQ requests that ACE provide a list of test methods and detection limits associated with each parameter for DEQ's review.

The FFS was prepared to evaluate the remedial alternatives for PCB contamination. Specified parameters were assumed as 7% fines, 18% moisture, 300 BTUs per pound, and 5,000 ppm TOC for all technologies evaluated. Available data from the removal actions provided adequate information for the alternatives analysis presented in the proposed plan and FFS. The Corps believes that these values are consistent with the site conditions. Soil characterization was adequate to evaluate the alternatives and to support selection of the proposed remedy. Chemical characterization of the PCBs was adequate for evaluation of the alternatives. Any additional data will be used to refine the remedial process rather than for remedy selection. If the basic performance criteria of attaining 1 ppm residual PCB could not be met by an alternative technology, additional data was not and will not be sought to further evaluate that alternative because it does not satisfy the cleanup criteria on its face.

We used TCLP, a standard test to determine whether a media is hazardous waste, to test the stockpiles. We consider TLCP to be adequate to do our baseline survey of the stockpiles. The results of the TCLP demonstrate that the stockpiled soil has no leaching metals and therefore is not hazardous waste. We agree that we need to perform additional testing of the stockpiles to identify any contaminants that may need to be considered and tested for during the POP test. We will perform this additional stockpile testing prior to operation of the ITD unit. We will provide the DEQ with a list of the tests we propose to do as requested.

The ITD process will successfully remove organic carbon, PAHs, chlorobenzene and any other organic material that may be found in the stockpiled soils. The process will not remove metals such as copper, arsenic or cadmium. However, these

metals and organic compounds are not generally found in association with PCB capacitors and are not among the contaminants of concern for this remedial action. We will sample and test the treated soils for compliance with the cleanup criteria for PCB and to determine if hazardous wastes are present before placement. We will include the type of testing we propose to do in the workplan for review and discussion with DEQ and EPA.

2. Alternatives 4B and 4C

Four of the ten alternatives evaluated in the FFS are the Indirect Thermal Desorption ("ITD") process coupled individually with four different chemical processes to destroy the PCBs extracted by the ITD process. In section 7.3, ACE rejects alternatives 4B (ITD and Solvated Electron Technology) and 4C (ITD and Gas-Phase Chemical Reduction) due to a lack of evidence that they can meet the remediation goal of 1 ppm. ACE did not perform field pilot testing to demonstrate that the treatment methods are capable of destroying PCBs to less than 1.0 ppm. DEQ is unable to evaluate and to provide comment on alternatives that must be rejected due to lack of testing. Including these alternatives in the FFS without tests to determine if they are capable of reducing PCB levels in soil from Tanapag below 1 ppm seems to defeat the purpose of their inclusion.

The four chemical processes that were considered for treatment of the ITD residuals were rejected because it has not been demonstrated that these methods are capable of destroying PCBs to meet the remediation goal in the soil (matrix) at Tanapag coupled with the ITD process. Therefore these technologies will not be protective of human health and the environment. Nor would their use on this project achieve the ARARS. Therefore they fail the threshold criteria.

The purpose of a focused feasibility study is to limit the comparative analysis of alternatives to those alternatives that have successfully achieved commercial application in the marketplace. A FFS is not required to conduct production level pilot tests of the type necessary to establish whether the post ITD treatment method will meet the remediation objective.

3. CNMI Permits

The FFS assumes that local permits are not required to implement any of the remediation options presented so long as the remediation takes place "on-site." DEQ disagrees with this assertion and maintains that ACE must comply with CNMI permit requirements triggered by the remediation method ultimately selected.

In considering the "no action" alternative, the FFS states that "the implementation of this alternative is assumed to be exempt from any permit requirements in accordance with CERCLA." (FFS at 7-2.)

Later in the document, a more detailed discussion occurs, which explains that CERCLA § 121 and the National Contingency Plan ("NCP"), 40 C.F.R. § 300.400(e) "provide that permits are not required for federal agency removal or remedial actions conducted entirely on-site, and when such response action is selected and carried out in compliance with CERCLA." (FFS at 7-8.)

The reliance on CERCLA §121(e)(1) is misplaced for several reasons. First, this remedial action is being proposed and executed under a RCRA § 7003 order. See USEPA, Region IX Final Administrative Order In the Matter of Tanapag Village Saipan, Commonwealth of the Northern Mariana Islands (hereinafter "FAO"). RCRA does not excuse federal agencies from obtaining state permits applicable to their activities. The order states that compliance "shall not relieve Respondent of its obligation to comply with RCRA and/or any other applicable State…law, regulation, permit, or other requirement." FAO at 16, § XXIV(4). Second, the CERCLA exemption applies only to removal or remedial actions selected in compliance with CERCLA § 121. DEQ disputes that the remedial selection process complies with § 121. For example, ACE designed, tested, and prepared a draft implementation plan for a remedial option before a FFS was ever prepared and before public comment on the remedial alternatives. This is not in accordance with CERCLA or the NCP. Finally, even if the CERCLA permit exemption applies, ACE must comply with the substantive requirements of CNMI law applicable to any remediation.

We will comply with the substantive standards of CNMI law and regulation that are applicable, i.e., enforceable, against the United States. In addition, we will comply with the CNMI substantive standards that are not enforceable, if they are reasonable and technically feasible. Please provide us citations to and copies of the substantive standards which the CNMI believes bear on this remedial action, and provide us the name or names of people within the DEQ that can help us work with these standards to achieve compliance with them. The Corps and its contractors have enjoyed a helpful relationship with the DEQ on these technical compliance issues during the removal phase of this project, and we believe that all parties are committed to continuing this relationship through completion of the remedial action.

The US Army Corps of Engineers is undertaking this cleanup action under the Defense Environmental Restoration Program (DERP), 10 USC 2701 and following, on behalf of the Department of Defense (DOD). The DERP is divided into the Installation Restoration program (IRP) for current military sites, and the Formerly Used Defense Sites program (FUDS) for sites formerly used by a military department. The DOD has delegated responsibility to execute the FUDS program to the Department of the Army (DA) who has re-delegated it to the Chief of Engineers.

10 USC 2701 provides that program activities "shall be carried out subject to, and in a manner consistent with, Section 120 (relating to Federal facilities) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980

(hereinafter in this chapter referred to *as 'CERCLA') (42 USC 9601 et* seq.)." 10 USC 2701 and following provides the authority and the funding for the Corps to undertake the PCB cleanup at Tanapag.

On December 20, 2000, the USEPA issued a RCRA administrative order to the Department of the Army which addressed this previously existing, on going cleanup effort. The effect of the order is to give the USEPA regulatory oversight of the project. However, the order does not modify or change the project's statutory authority or funding stream. In fact, the order provides at Article XXIX that nothing in it requires the Army to violate the Anti-Deficiency Act, 31 USC 1341 and following. If this project is not a DERP FUDS project executed subject to CERCLA, the Corps has no present authority or funding to execute it. Expending funds without authority is the essence of an Anti-Deficiency Act violation.

In accordance with CERCLA, 42 USC 9621, no Federal, State, or local permits are required. Federal and State standards are enforceable if the project is required to conform with them, i.e., if they apply. The Corps stated its view on the inapplicability of the CNMI's recently issued and adopted harmful substance regulation to this project in its letter to the CNMI DEQ dated July 19, 2001.

The Corps, after meetings with the DEQ, the Tanapag Action Group (TAG) and the USEPA in May and July of 2000, authorized its contractor to proceed to develop an indirect thermal desorption (IDT) unit that could be used at Tanapag. We understood that this equipment would take up to a year to construct. Now that the equipment is constructed, it does not have to be used at Tanapag.

We have received public comment on the Focused Feasibility Study and Proposed Plan and testimony at the formal public meeting on July 11, 2001. These have confirmed that ITD is the best alternative to remediate and reduce the volume of PCB contaminated soils at Tanapag Village, followed by shipment off island of the residual material. We hope to proceed to remediate the PCB contamination at Tanapag using the ITD technology if the USEPA under RCRA and the Secretary of the Army under DERP and CERCLA approve this alternative.

4. Community Acceptance Criteria

Please clarify how much weight the community acceptance criteria will have over the other two major criteria when ACE makes the final determination of which remediation option it will propose for USEPA approval.

The Corps evaluated and proposed a remedy in accordance with the nine criteria for evaluation set out at 40 CFR 300.430 and accompanying guidance on how modifying criteria is to be considered when selecting a remedy. The remedy the

Corps proposes is protective of human health and the environment and complies with the ARARS and the RCRA administrative order. The Corps is making every reasonable effort to address the community's concerns as identified in the public review process. In accordance with CERCLA and the NCP, a remedial alternative may not be selected if it does not satisfy the two threshold criteria or protectiveness and compliance with ARARs. The other seven criteria, including community acceptance, are considered by the final decision-makers as they select among alternatives that can meet the threshold criteria.

B. Specific Comments

1. Alternative 1, No Action

The estimated capital cost to implement this option is $1,039,500. The estimated annual Operation and Maintenance cost is zero dollars. In the description of the alternative, the FFS states that it *may* include monitoring and/or institutional control. Such controls should not be discretionary; they should be required. The severe weather conditions such as typhoons that are experienced seasonally in the Pacific mandate that this option include controls to deal with long-term storage. The cost for the long-term operation and maintenance of this option needs to be considered in the FFS.

The NCP at 300.430(e)(6) mandates the evaluation of the no action alternative in the FS process as a baseline. Because the materials had already been excavated under the time critical removal action and placed in a temporary storage area not intended for permanent disposal, a true no action alternative was no longer viable. Simply leaving the temporary storage area with materials that exceed the limits of the EPA order is not acceptable to USACE, and presumably also not to EPA and DEQ. The no-action alternative we discussed in the FFS was not a true no action alternative. We should have discussed a no cost, no action alternative rather than No Action with institutional controls. We evaluated off site encapsulation rather than on site encapsulation for the encapsulation alternative because the community has always and consistently required that the contamination be removed from their village. Further, there are tsunami inundation and project size constraints associated with an on site encapsulation alternative that eliminated it from consideration. Evaluation of a no action alternative is mandated by the NCP, Section 300.430(e)(6) as a baseline. An institutional controls alternative would not be a no action alternative. USACE agrees that taking no action with regard to the stockpiled soils is not acceptable, and therefore the Proposed Plan did not recommend that as the preferred alternative.

2. Alternative 2A, Off-Site Disposal

The FFS identifies the requirements of the Jones Act as a limitation in implementing this alternative. As described in the FFS, the Jones Act "requires that a U.S. flag carrier be used to transport shipments between U.S. ports." (FFS at 7-1.) Because ACE has identified only two U.S. flag carriers that serve the Marianas, the FFS considers this requirement a limiting factor in the feasibility (i.e., availability of ships and time required for shipment) and cost of shipping all of the waste off-island. (FFS at 7-5.)

Please provide more detail on the statutory or regulatory authorities that require that U.S. flag carriers must be used to transport shipments between U.S. ports. The Cargo Preference Act of 1954, 46 U.S.C. § 1241(b) (also known as the Merchant Marine Act of 1936 § 901(b)), appears to require that U.S. flag carriers be used for 50 % of such a shipment. Can ACE confirm that 48 C.F.R. § 247.572-2 requires the use of U.S. flag carriers for 100 % of the shipment in this specific situation?

The Covenant between the US and the Commonwealth of the Northern Mariana Islands specifies federal law that applies to US agencies implementing federal actions in the CNMI. Section 502(b) of the Covenant provides:

(b) The laws of the United States regarding coastal shipments and the conditions of employment, including the wages and hours of employees, will apply to the activities of the United States Government and its contractors in the Northern Mariana Islands.

Therefore, when an agency of the United States conducts a US activity in the CNMI that is funded with US dollars, the US coastal shipping laws apply. Among U.S. laws regarding coastal shipments, the Jones Act requires ships travelling between two U.S. ports to be built in U.S. shipyards, owned and operated by U.S. citizens, and to have an American crew. This law is dispositive as to the requirement use a US flag ship for shipments between the CNMI and the United States.

The CNMI comments referred to the Cargo Preference Act. The Cargo Preference Act requires that U.S. flagged vessels be used in the transportation by sea of supplies purchased by the military unless the freight charged by those vessels is "excessive and unreasonable". As a general rule, a U.S. flagged vessel must ship any cargo shipped in the performance of a government contract. 48 CFR 572-2 establishes a procedure for the contracting officer to follow in making and documenting a finding that proposed freight charges for a U.S. flag vessel are excessive or otherwise unreasonable. It has been the Corps's experience that freight charges between the CNMI and the US are not excessive or otherwise unreasonable. (The following language was added for further clarification on 3 October 2001:) Because of this, we would not reach the 50% determination. Nor would it make economic sense to split this shipping requirement between a US flag and a foreign carrier (added 3 October 2001).

Given the present estimated cost of this alternative, it seems likely that if this option were selected, remediation of the waste piles could be significantly delayed by funding constraints.

This is correct.

Does the ACE have access to the $18 million needed to remove the PCB contaminated soil off-island for disposal?

Congress will appropriate funds for the remedial action on this project as part of the FUDS Environmental Restoration Account appropriation for Fiscal Year 2002. Congress has not yet passed legislation to authorize or appropriate those funds. USACE has not programmed and requested funds for the higher cost alternative of off-island disposal as it is not the preferred alternative and does not best meet the remedy selection criteria of CERCLA and the NCP. If a decision is made to select off-site disposal as the final remedy, funds will be requested from the FUDS-DERA to pay for the cost of the remedy. Under the circumstances of this site, this remedial action is relatively high priority within the FUDS program. It is likely, however, that changing the remedial alternative at this point to a significantly higher cost remedy would delay receipt of adequate funds and therefore delay implementation of the remedy.

If not, how long will it take ACE to implement this option including a search for the necessary funding?

We do not know. We selected a remedy by following the CERCLA process. We came up with a recommended alternative that is protective of human health and the environment, complies with the ARARS and the RCRA order, can be implemented in less than a year, and costs much less than off island disposal of the untreated contaminated soil. There are risks associated with leaving these stockpiles of contaminated materials in places over long periods of time while waiting for funding. USACE has requested and programmed funding adequate to proceed with the recommended remedial alternative.

3. Alternative 2B, Off-Site Encapsulation

The FFS states that "[a]lternative 2B consists of off-site disposal of stockpiled soils to a RCRA Subtitle D-like waste management unit constructed on Saipan to permanently contain PCB-impacted soils." (FFS at 7-6 § 7.2.3.) It is not clear why RCRA Subtitle D is chosen as the standard for the waste management unit. In the discussion of Alternative 2A, Off-Site Disposal, the FSS considers disposal of the stockpiled soils at an appropriate disposal facility on the U.S. mainland. Section 7.2.2 states that "soil and concrete/asphalt debris that have PCBs at a concentration of less than 50 ppm are considered

a solid waste" and may be disposed of at a RCRA Subtitle D facility. (FFS at 7-4.) However, soil and debris "that have PCBs at a concentration of greater than or equal to 50 ppm will be taken from the site for disposal at a TSCA-approved PCB disposal facility." (FFS at 7-4.) Please clarify the difference in the standards applied to the waste management units on the U.S. mainland and on Saipan. Why would a similar distinction not be made on Saipan as to the requirements for a waste management unit to handle materials contaminated with PCBs at a concentration above 50 ppm?

Section 4.2 of the FSS contributes to the confusion identified in the proceeding paragraph. This section states that "non-liquid PCB remediation wastes containing less than 50 ppm may be sent off-site for disposal in…a ***traditional RCRA Subtitle C*** landfill…" (FFS at 4-1 (emphasis added).) It goes on to state that "PCB remediation waste with concentration at or above 50 ppm may be sent off-site for disposal to a TSCA incinerator, TSCA chemical waste landfill or RCRA Subtitle C landfill." (FFS at 4-1.) Standards for RCRA Subtitle C, RCRA Subtitle D, and TSCA facilities are not the same. DEQ requests that ACE clarify which standards it would apply to the waste management facility on Saipan that is discussed in Section 7.2.3.

Soils considered for off-site encapsulation under Alternative 2B have a wide range of PCB concentration. For the purpose of the FFS, it was assumed, conservatively, that a significant portion of the stockpiled soil would have concentrations at or above 50 ppm, although data from the stockpiles indicates that most of the excavated soils are 50 ppm. Soils with PCB concentration of more than 50 ppm must be treated or disposed of as required by the Toxic Substances Control Act (TSCA) (40 CFR 761.60).

The first sentence of the description of Alternative 2B should be changed to read: "Alternative 2B consists of the off site disposal of stockpiles soils to a TSCA compliant waste management unit constructed on Saipan to permanently contain PCB impacted soils." RCRA does not apply to the PCBs in the soils, per se. PCB contaminated soils, that is, soils containing less than 50 ppm, may be placed in a RCRA certified landfill. However, soils containing over 50 ppm, must be placed in a TSCA landfill.

Overall, DEQ finds that this alternative is neither suitable nor practical for the CNMI. First, it will limit future land use and development of the area surrounding the site used for the encapsulation. On a small island, land resources are precious. Second, Saipan is in a seismic zone and is subject to frequent typhoons. Severe natural conditions could compromise the safety of a waste management unit constructed on Saipan. Third, as the FFS points out, currently there are no RCRA- or TSCA-permitted disposal sites on Saipan. The technical expertise to handle an emergency at such a facility may not be available on the island if it is needed. Finally, it is not right to store hazardous waste material on the island untreated because it will harm future generations of the CNMI.

Comment noted. We concur with DEQ's view of this remedy and since preparation of the FFS, in the proposed plan and the final decision we have selected a more suitable remedy for approval and implementation.

4. Alternative 3B, On-Site Treatment by Incineration

Incineration will attempt to destroy PCBs by applying direct heat to the molecule. It is proven that the process can produce even more toxic pollutants like dioxin and furans from the combustion of PCB. (FFS at 7-12.) This is a big risk to take, even if the system has very stringent requirements for operation. How will ACE deal with a failure of the air emissions control system? If the air emissions control system should fail at any point in the treatment process, will the overall system retain any toxic emissions (i.e., dioxins or furans) generated before the unexpected shutdown occurred?

PCBs have been successfully and safely incinerated in specially designed incinerators for years on the Mainland. While it is true the incomplete or low temperature combustion of PCBs may lead to the formulation of dioxins and furans, PCB incinerators are designed with safety features to protect against the generation and release of harmful combustion bi-products. A failure to achieve the appropriate combustion temperature or failure of the air emissions control systems will result in an automatic system shutdown. In an emergency shutdown, everything is contained; nothing is released to the environment. One major reason that there are so few alternatives to incineration, for PCB destruction, is that incineration has been demonstrated to be safe, clean, cost effective and portable.

5. Alternative 4D, On-Site Treatment by ITD and PCB Destruction by Base-Catalyzed Dechlorination

After application of the screening and evaluation criteria, the FFS retained four (4) remediation options – Off-site disposal, Off-site encapsulation with stabilization, on-site treatment by incineration, and on-site treatment by ITD with off-site disposal. (FFS at 7-23 § 7.3.) Soil stabilization with encapsulation does not remove or destroy the contamination present within the soils. Therefore, it does not represent the best available technology, and should only be considered as a last resort to other alternatives. The remaining on-site treatment options are incineration and ITD.

On-Site treatment by ITD and PCB destruction by Base-Catalyzed Dechlorination ("BCD") was considered as alternative 4D in the FFS, but rejected because ACE did not run bench-scale tests to demonstrate the effectiveness of the process on contaminated residuals from Tanapag. (FFS at 7-23.) DEQ understands that this technology is available and has been successfully used to treat PCB waste at a site in Warren County, North Carolina to very low levels using indirect thermal desorption and mixing a solid phase BCD reagent (such as sodium bicarbonate) in with the contaminated soils. Up to 95%

chemical destruction was documented, reducing PCB concentrations from as high as 850 ppm to less than 0.003 ppm, and dioxin concentrations from up to 250 parts per trillion (ppt) to less than 3 ppt.

This may be a viable alternative process that ACE should consider more extensively in the FFS. A comparison of the BCD process mentioned above with ITD would help ACE and the CNMI determine whether ITD is the best option for the Tanapag site.

Base Catalyzed Dechlorination (BCD) is very effective for PCB contaminated liquids but will not be effective on the filter cake that is the residue from the ITD process. Application of the BCD process to the filter cake may increase the volume of the filter cake by a factor of ten. This will result in 4000 tons of residual material that must be disposed of rather than 400 tons. Additionally, the BCD treated residuals will be very oily and asphaltic and unsuitable for disposal on Saipan. If this material cannot be disposed of on Saipan, it will require transportation and disposal on the Mainland.

Use of the BCD process may require a pilot study performed in Saipan on the residuals from the ITD process applied to the stockpiled soil to insure that the 1 ppm remediation object can be met. In summary, Alternative 4D was rejected, as were the other three options that proposed a chemical treatment process be applied to the 400 tons of ITD residuals, because none of the chemical treatment methods have been pilot tested. It makes no economic sense to propose a treatment method, which must be pilot tested in Saipan, before it can be utilized. The cost of conducting a pilot test in Saipan, the extra time required to conduct the test, combined with the very real potential for the test to fail, make the application of BCD unacceptable from a cost and timeliness perspective.

(The following language was added for further information on 3 October 2001:)

The SET process has never been coupled to an ITD to treat the matrix generated by the ITD. The ITD process concentrates the contamination (PCBs) in the filter cake. Any humic matter that vaporizes below the temperature of PCB also is collected in the filter cake. This high organic loading is an interference in SET.

In order to validate that SET would perform acceptably as attached to an ITD, a pilot study would need to be performed using the ITD matrix. The relatively complex chemical process of SET makes it less desirable for on site treatment of residuals due to logistical management of chemical supply and by-products.

6. Alternatives 4E, On-Site Treatment by Indirect Thermal Desorption and Off-Site Disposal

If this option is selected and approved by U.S.EPA, 400 tons of residual concentrated PCB must be shipped off-island to a mainland disposal site. How will ACE deal with the contingency if the disposal site selected experiences difficulties or ceases accepting waste from Saipan? What is the possibility that the concentrated residual PCB will remain on the island for an extended period of time if ACE encounters unexpected obstacles in shipment or at the treatment facility? What measures would ACE propose to plan for this possibility and mitigate the effects on Tanapag in the event that it occurs?

The Corps does not plan for the ITD residuals containing the concentrated PCBs to remain on Saipan. There are several mainland disposal options available to the USACE, anyone of or all of which, will be available to accept the ITD residuals. It is our intent to remove the residuals from Saipan as soon as possible. Storage of the PCB contaminated residuals will be done in a safe manner that complies with Federal standards for PCB storage. We have evaluated the logistics of shipping 400 tons of filter cake to the US through Guam to the US mainland. We have not identified significant problems since the quantity of material is small. We are continuing to work through the logistics of the shipping process, and if issues arise, we will work through them.

II. Proposed Plan

A. General Comments

The Proposed Plan ("PP") identifies Alternative 4E, On-site Treatment by ITD combined with off-site disposal of the residuals, as ACE's preferred remedial alternative for the Tanapag Village PCB clean up. (PP at 17.) The Interim Draft Treatment Plan sets forth ACE's proposal for the implementation of this option at the site. DEQ requested an extension of the comment period on the Interim Draft Treatment Plan so that it could focus on the first step of commenting on the FFS and PP. It should be noted, however, that ultimate acceptance of the preferred alternative in the CNMI depends very much on the completed evaluation of the alternatives, the quality of the treatment plan and the conditions imposed in USEPA's Record of Decision. DEQ's comments on the PP and the brief comments on the Interim Draft Treatment plan set forth in this document should not be construed as DEQ approval of the preferred treatment alternative. DEQ plans to comment fully on the Interim Treatment Plan and expects that implementation of any alternative would occur only after EPA approval and the completion of a final treatment plan that is acceptable to all parties.

Comment noted.

After careful consideration of the alternatives and the FFS, DEQ finds that the proposed remediation method is feasible for implementation on Saipan provided that the scientific and engineering issues for this type of technology are satisfactorily addressed in a treatment plan. Again, DEQ's ultimate

acceptance of the selection of the ITD treatment coupled with off-site disposal of the residuals is contingent on: (1) DEQ's comments on the FFS being satisfactorily addressed; (2) conditional approval by the USEPA; (3) the satisfactory resolution of numerous detailed issues that must be addressed in the interim draft treatment plan; and (4) the conclusion of a successful performance test of the ITD unit in Tanapag that demonstrates that all of the conditions set forth in a conditional approval issued by the USEPA are met.

The Corps looks forward to DEQ's participation and involvement in working through the issues pertaining to our executing a successful remedial action at Tanapag Village.

B. Specific Comments

1. Introduction

The introduction indicates that ACE and EPA will make the final selection of a remedy to be used in Tanapag. (PP at 1.) This implication is confusing to DEQ and the public. It does not make the distinction between the roles of the two federal agencies in the process of selection and approval. As DEQ understands it based on statements from ACE and EPA and the RCRA § 7003 FAO, ACE has proposed a remedy for the site, and it will either be approved or disapproved by EPA. The roles of the federal agencies should be clearly defined to the community of Tanapag.

DEQ's understanding is correct in that the Corps will evaluate and select an alternative in accordance with DERP and CERCLA, which must be approved by the Secretary of the Army unless delegated. In accordance with the RCRA administrative order, the USEPA must also approve the remedial method proposed by the Corps. The Corps and USEPA are working together to ensure that the remedial method ultimately proposed by the Corps will receive USEPA approval.

2. Site Characteristics

This section states that "approximately 4,000 cubic yards of contaminated soil was left in place at Main Cemetery *and covered by a layer of crushed coral*" at the conclusion of Phase II of the response action in Tanapag Village. (PP at 2 (emphasis added).) This statement is not accurate. A clear plastic liner was used to cover the stockpile left after Phase II. Members of DEQ's staff were at the site when ACE's contractor, TerraTherm Corporation, secured the pile before they left island. A layer of crushed coral was not used.

At the conclusion of Phase II two stockpiles of soil were left in place and covered with a heavy, highly heat resistant liner. The liner was in tact until the soil was

removed during the Phase III activities in September of 2001. The two soil piles that were removed were a total of 300 cubic yards combined.

The 4000 cubic yards mentioned in the Proposed Plan was the estimated volume remaining in-situ at Cemetery II after a preliminary site characterization that took place at the end of the Phase II site operations. Portions of Cemetery II were cordoned off with signs and fencing to warn the public to avoid these areas. The portions of the cemetery that were outside of the fencing were covered with 6 mil plastic sheeting and than a 6 inch to 1 foot layer of crushed coral was placed on top to prevent public exposure in these areas. Members of the DEQ were at the site during these operations and helped in the process of laying the plastic sheeting.

This error is particularly disturbing given the present status of the holding cells containing the PCB-contaminated soil currently in Tanapag. The USEPA, Region IX Final Administrative Order (FAO) governing the Tanapag Village PCB site mandates that the holding cells containing the excavated soil "shall be designed to safely hold the contaminated soil/debris/equipment and to withstand high winds and rain from severe storms." (FAO at 7, § VIII(1)(A)(4).) More specifically, the FAO instructs: "Once the cell is filled to capacity, a 24-mil PVC liner shall be placed over the top of the stockpile. *An additional six inch layer of clean soil shall be placed over the liner* and the stockpile shall be sprayed with a chemical sealant." Id. (emphasis added).

The current soil stockpiles have not been secured with a layer of soil as required by the order. DEQ has written to ACE to express its concern over the vulnerability of the contaminated soil piles should a major storm event occur. See Letter from Antonio I. Deleon Guerrero, Acting Director, Division of Environmental Quality, to Ray H. Jyo, Deputy District Engineer, U.S. Army Engineer District, Honolulu dated April 12, 2001 (Attachment A). To date, a satisfactory response has not been received, and no further steps have been taken to secure the holding cells. See Letter from Ray H. Jyo, Deputy District Engineer, U.S. Army Engineer District, Honolulu, to Antonio I. Deleon Guerrero, Acting Director, Division of Environmental Quality dated April 30, 2001 (Attachment B).

The Corps is working closely with the USEPA to develop engineering controls that will function adequately to protect the health of the people of Tanapag and their environment until we can conclude the proposed remedial action. We will be submitting a new request to the EPA to revise the RCRA 7003 order to delete the addition of 6" of clean soil. We are working with EPA to establish a standard of protective performance for the stockpile stabilization. We believe that the engineering controls we have undertaken at the site, including our very recent activities there, will protect Tanapag Village, if we are able to proceed with the remedial action this fall. If the remedial action takes a longer time to implement, we agree that we may need to reevaluate these engineering controls in order to maintain an adequate level of protection.

3. Scope and Role

The PP indicates that this action to remediate the Tanapag Village PCB contamination will be the final remedial action at the site. (PP at 4.) To date, from the Phase I clean up action up to this Phase III action, less than 60 capacitors were found and no one knows the exact number of capacitors that were brought to Saipan. If one or more capacitors are discovered in the future, will the ACOE take action to address the problem immediately?

Yes, in the event further capacitors are discovered, the Corps will investigate to determine if the capacitors are those for which the DOD is responsible because of a former DOD activity, in accordance with FUDS. If DOD is responsible for them, we will address the problem as soon as possible, subject to availability of funds for the purpose.

4. Summary of Site Risks

This section contradicts statements made in later sections over the level of risk to human health at the site. The explanation of the risks states that "[a]ccording to the USEPA Region IX PRGs, a soil concentration of .22 ppm corresponds to a risk of one-in-a-million to develop cancer during a lifetime if the receptor is exposed to the soil for 6 years as a child, 24 years as an adult, spending 24 hours per day, 350 days per year at the site, inhaling 20 cubic meter of air per day, incidentally ingesting 100 mg/day of soil as an adult and 200 mg/day as a child and experiencing dermal contact with soil over significant portion of the body." (PP at 5.) It then states that "the PRG models the target level for remediation of 1.0 ppm corresponds to less than five-in-a million excess cancer risk." (PP at 5.)

These statements seem to mean that if the level of PCB in the soil at Tanapag is reduced to 1 ppm, this will correspond with a five-in-one-million excess cancer risk from exposure to soil. However, in the next section "Remedial Objectives" the PP asserts that the proposed action will reduce the excess human health risks associated with exposure to PCB contaminated soils to less than one in one million

by reducing the concentrations of PCB in soils to 1.0 ppm or less. (PP at 5.) This is not correct based on the discussion of risk contained in the document. Please explain how the excess human health risk associated with exposure to PCB can be reduce to less than one in one million by reducing the PCB concentration in the soil to 1ppm or less when the USEPA PRG of .22 ppm corresponds to risk of one-in-one-million?

USACE did not complete a full site specific risk assessment for this site. This is in part because the EPA order mandates the cleanup level. The EPA order is based on TSCA (text corrected 3 October 2001). This level is consistent with or lower than the cleanup level for PCBs used by EPA and other federal agencies at many National Priorities List sites throughout the United States. Data indicates the cleanup level will be achieved with the preferred alternative for the final remedial action and that achievement of this level will be protective of human health and the environment for any use of the treated soils. Unfortunately, some of the discussion in the Proposed Plan regarding risk levels is speculative or in error,–as pointed out in these comments. USACE believes that the EPA-ordered cleanup level complies with CERCLA and the NCP and is protective.

In addition, the first sentence of page 5 contains a typo: 1 X 10E-4 is not one-in-one-hundred-thousand. It is one-in-ten-thousand.

Correct, the sentence should have read one-in-ten thousand.

Finally, ACE's discussion of the human health risks is incomplete because it focuses on the risk of exposure through contact with the soil, and fails to include the potential for cumulative risk from exposure to other media, or other potential contaminants of concern. It is known that the residents of Tanapag have been in the past and may continue to be exposed to PCB through ingestion of land crabs. In addition, other harmful contaminants have been identified in the Tanapag area as a result of the Fuel Farm Tanks located in the village.

The purpose of this remedial action is to address only the contamination resulting from leakage of Aroclor 1254 from the capacitors placed in the village. While it may be true that there are other contaminants present in Tanapag, the FUDS program is not a general environmental response program such as the Superfund. The Corps may only remediate contaminants that result from eligible former DOD activities. Nonetheless, as a practical matter, any contamination present in the stockpiled soils that is of organic origin such as petroleum residuals from the tank farm will be removed along with the PCBs.

It is not clear what the source of any PCB may have been for any land crabs that were affected. If the PCBs in soils that USACE excavated were a source, it has

been removed and the remedial action will ensure a level of cleanup that will prevent any future pathway of exposure to the public.

The stated human health risk of five-in-one-million excess cancer risk does not take these factors into account. ACE should revise this section to reflect more accurately the human health risk associated with the site, or to explain that factors that would affect the risk level were not taken into account.

See above.

5. Alternative 4E: On-Site Treatment by ITD and Off-Site Disposal

This section contains a discrepancy with the discussion of Alternative 4E in the FFS. The FFS states that the ITD process will result in 400 tons of contaminated residuals. (PP at (FFS at 7-21.) The PP states that 200 tons of PCB contaminated residual from the ITD process will be shipped off the island. (PP at 11.) Is the 200 ton figure a typo? If not, please clarify the discrepancy.

The ITD process will result in 400 tons of contaminated residuals.

III. Interim Draft Treatment Plan: Phase IV Tanapag Village, Island of Saipan, CNMI

As stated in section II(A) of this document, DEQ has requested an extension until August 17, 2001 to provide detailed comments on the Interim Draft Treatment Plan. The comments and questions presented here are based on our initial review of the plan. DEQ reserves the right to submit additional comments at a later date.

Noted.

A. Mechanical Failures and Parts Replacement

Any mechanical system experiences some degree of wear and tear and failure on its component parts. A DEQ staff member discussed this issue with ACE's contractor and asked that the contractor identify specific points of failure expected if the ITD is used. DEQ requests that ACE identify in writing the component parts of the ITD that it expects to experience the most mechanical wear and tear and failure during its operation. Also indicate the frequency that ACE expects that the component part will need to be replaced during regular maintenance.

ECC has extensive experience with operations of the ITD process. It is anticipated that every 1-2 weeks, the system will be stopped in a controlled manner and opened for inspection. Wear rates and items are:

- Internal flights of the dryer 100,000 tons

- Vent Chutes 10,000 tons
- Soil conditioner screw auger 15,000 tons
- Insulation 50,000 tons
- Tipping Valve seats 50,000 tons
- Hoses 100,000 tons
- Rotary Valves Internal 30,000 tons
- Conveyor Belting 20,000 - 50,000 tons
- Pump Seals 40,000 tons

Mechanical failure is not a common cause of down time. Scheduled down time allows the operator to predict failure before it occur. Additional information will be contained in the work plan.

B. Air Emissions During Forced Shut Down

Overall, the draft plan does not sufficiently address air emissions from the ITD unit or the type of control systems and monitoring that will be used to reduce emissions. In order to insure proper control of potential emission concerns, there should be an air-monitoring program in place to test for fugitive emissions and breakthrough of all potential chemicals of concern. A detailed discussion should be added to the draft plan.

DEQ administers Air Pollution Control Regulations that require an air permit for all new emissions sources in the CNMI. DEQ's position is that ACE is required to obtain a local air emission permit to operate the ITD unit in the CNMI.

Furthermore, during forced shut downs, ACE will need to have a plan in place to address the gas emissions generated in the system just before the shutdown. This should also be added to the Draft Treatment Plan.

Although the permit issue is governed by CERCLA section 120, we intend to comply with the substantive standards of all applicable laws and regulations in this remedial action. Please provide us the name of a person in DEQ with whom our contractors and we can work to address CNMI substantive requirements and concerns. At present, the draft treatment plan addresses controls, and its appendix includes modeling calculations for upset conditions. We will add a concise table to the final plan. The ITD system will be operated in compliance with all substantive rules for emissions. Forced shut downs are addressed in the ITD plan (see response paragraph above). The system is shut down in a safe mode when forced outage occurs.

C. Water Usage and Storm Water Control

With respect to water usage, based on ACE's operation parameter, the ITD system will consume roughly 1,200 gallons per treatment hour. Does this estimate account for any additional water the system will consume during startup after a planned or forced shutdown? If not, how much additional water will be needed for startup events?

Cemetery 2, the proposed site of the ITD unit is a flood prone area. The draft plan must include erosion control measures and a storm water management plan for the operation site to address this issue. The plan should consider the likelihood of heavy rains and typhoon conditions. DEQ administers an Earthmoving and Erosion Control program that requires permits for all earthmoving activities. Approval of a particular activity is contingent on the approval of a storm water management and erosion control plan by DEQ's engineering staff. ACE should obtain a local earthmoving permit. At the very least, ACE must comply with the substantive requirements of DEQ's regulations.

The estimated water consumption includes water consumed during shut downs and startup. The project will comply with applicable and substantive earthmoving, storm water, and erosion control requirements. Again, we appreciate DEQ's continuing cooperation and support and we request a DEQ point of contact with whom to work.

Please see our responses to EPA related to these issues.

D. Material Safety Data Sheet

An MSDS for the biocide ACE proposes to use in the ITD process should be provided to DEQ prior to use in the remediation. Appendix B does not have the report on the biocide.

ECC will provide an MSDS for biocide in the revised report.

E. Alternative Mainland Disposal Site

The Interim Draft Plan indicates on page 5 that if the identified and approved facility in Utah ceases to accept the 400 tons of residual PCB, ACE will locate an approved and permitted alternate facility for disposal. This alternative facility should be identified and secured now to avoid unnecessary delay during which the concentrated PCB waste is stored in Tanapag while an alternate facility is identified if a problem occurs.

Please refer to Traffic and Transportation Plan and response to comment #6 on page 3. Multiple sites will be set up to receive the residual wastes in case of unexpected obstacles.

F. Plan to Dispose of Certain Debris at Puerto Rico Dump

Under the Interim Draft Traffic and Transportation Plan, page 1, ACE should describe how it plans to determine which waste is non-hazardous considering that all of the existing debris under the poly liner covers is in contact with the contaminated soil.

We will not send contaminated debris to the Puerto Rico dumpsite. All debris will be sent to the mainland for disposal. The hazardous nature of the debris will be determined based on direct contact with contaminants. Soil profiling will be completed and compared to the facility acceptance criteria to determine which facility will accept the waste

G. Training for Local Workers

The plan states that ACE plans to hire 15-20 local unskilled and skilled workers from the island. Will these people need to be trained and certified in order to work within the hazardous condition area?

It is currently planned that some site workers from past ECC activities will be hired for this phase of work; additional labor will be acquired. The workers will be trained in 40 hr OSHA HAZWOPER, as well as on-site training for treatment and site operations.